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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,358	09/14/2005	Patrick B Farley	36-1924	5464

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NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER	
HUSSAIN, IMAD	

ART UNIT	PAPER NUMBER
2109	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,358	FARLEY ET AL.	
	Examiner	Art Unit	
	Imad Hussain	2109	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b)..

Status

1)☒ Responsive to communication(s) filed on *19 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☒ Claim(s) *1, 2, 4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/26/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. GB0306971.3, filed on 26 March 2003.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Client-side Load Balancing for Web Services.

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
    (1) Field of the Invention.
    (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

4. The use of the trademark JAVA has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

5. The use of the trademark MICROSOFT has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

6. The use of the trademark PASSPORT has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

7. The use of the trademark .NET has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

8. The use of the trademark BRITISH TELECOMMUNICATIONS has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

9. Claims 1 and 4 are objected to because of the following informality: extraneous comma after the phrase "acting as a client module". Appropriate correction is required.

10. Claim 2 is objected to because of the following informality: lack of a colon after the word "comprising". Appropriate correction is required.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 19, 20, 22, and 23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Computer programs, per se, and data signals are non-statutory subject matter as they do not fall within the four

categories of statutory patentable subject matter (process, machine, manufacture, or composition of matter). (See MPEP § 2106.)

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 1, 3, 7-9, 11, and 15-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahuja et al (US PAT 6175869) (hereafter referred to as Ahuja) in further view of Al-Ghosein et al (PCT WO 00/10084).

14. Regarding claim 1, Ahuja discloses a method of managing service requests from a first module acting as a client module, to a plurality of other modules acting as server modules, the method comprising:

an information-collating module ("client agent") receiving from each of the other modules ("servers sites") an indication of the operational status of each of the other modules ("dynamic performance data, e.g., network conditions, server load, and other server site-specific information", column 5, lines 11-16);

at the first module ("client"), the control intermediary ("client agent") selecting one of the other modules for directing a service request to based on the indications of operational status of the other modules (column 5, lines 16-18).

Ahuja does not explicitly disclose that the control intermediary receives status information particularly from the information-collating module, as both receiving and collecting functions are contained in and performed by a client agent.

However, Al-Ghosein discloses a collective metric data store (504) that collects consolidated metric data from server sites and makes said data available to a load balancing engine (62) (page 22, lines 7-8).

Ahuja and Al-Ghosein are analogous subject matter in the same field of endeavor as both cover load balancing and fault tolerance at a device or devices located at or between a client and a plurality of servers. One of ordinary skill in the art at the time the invention was made would have been motivated to modify the client side agent taught in Ahuja with the separate load balancing engine and metric collector taught in Al-Ghosein because doing so "provides a dampening of variance typical in processing metric data" (Al-Ghosein, page 3, line 35 - page 4, line 1) and allows for multiple load-balancing engines (Al-Ghosein, page 23, lines 7-8). Ahuja also states that the client agent "utilizes additional information received from an entity associated with the server pool" (Ahuja, claim 1), suggesting by this separation of elements the desirability of such a modification. Therefore, the claimed invention as a whole would have been "*prima facie* obvious" to one of ordinary skill in the art at the time the invention was made.

15. Regarding claim 3, Ahuja discloses a control intermediary repeating the step of selecting one of the other modules for directing a service request to, so as to identify an alternative other module, in the event that the transmission of the service request to the

selected module fails. ("detects non-responsive servers and transparently redirects requests to other replicated servers in the server pool", column 3 lines 11-12).

16. Regarding claim 7, Ahuja discloses a method according to claim 1, in which the control intermediary selects the one of the other modules on the basis of the loading of the modules ("avoidance of overload conditions at various servers, and to provide load balancing, i.e., distribution of the total load offered to the web site among the available servers in a way that is deemed efficient by the provider", column 10, lines 22-26).

17. Regarding claim 8, Ahuja discloses that a method according to claim 1, in which the control intermediary periodically polls the information-collating module to obtain the indications of the operational status of the other modules (the information-collating module "periodically collects information about the load offered to each server in the pool by contacting the corresponding server agent", column 12, lines 30-33).

18. Regarding claim 9, the claim comprises the same limitations as discussed in claim 1. The same rationale of rejection is applicable.

19. Regarding claim 11, the claim comprises the same limitations as discussed in claim 3. The same rationale of rejection is applicable.

20. Regarding claims 15 and 16, the claims comprise the same limitations as those discussed in claims 7 and 8, respectively. The same rationale of rejection is applicable.

21. Regarding claim 17, Ahuja discloses a system according to claim 9, in which the other modules are Web service servers ("a client request directed to a web site or other service", abstract).

22. Regarding claims 18-20, the claims comprise the same limitations as discussed in claim 1, respectively. The same rationale of rejection is applicable.

23. Regarding claims 21-23, the claims comprise the same limitations as discussed in claim 9. The same rationale of rejection is applicable.

24. Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahuja in view of Al-Ghosein as applied to claim 1 in further view of Stricek (*A Reverse Proxy is A Proxy By Any Other Name*) (hereafter referred to as Stricek).

25. Regarding claim 2, Ahuja discloses a method according to the above limitations in which the first module comprises a client application (e.g., "web browsers", column 8, line 16) and the control intermediary ("client agent", column 5, line 11), the method comprising

the control intermediary receiving a request for a Web service description (abstract) from the client application (e.g., "web browsers", column 8, line 16), and selecting one of the other modules to direct the request to based on the indications of operational status of the other modules (column 5, lines 16-18);

the control intermediary receiving (column 5, line 18) the requested Web service description (abstract) and passing the description to the client application (column 5, lines 18-19).

Ahuja does not disclose substituting an identifier of the control intermediary into the description passed to the client application.

However, Stricek teaches the process of substituting an identifier ("reference") of a control intermediary ("reverse proxy") into the description passed to the client application ("client") (page 4, lines 8-13).

Ahuja and Stricek are analogous subject matter in the same field of endeavor as both cover load balancing and fault tolerance across a server pool by means of an intermediary control module. One of ordinary skill in the art at the time the invention was made would have been motivated to modify the client side agent taught in Ahuja with the identifier substitution taught in Stricek because doing so creates a single point of access from the client's point of view (Stricek, page 1, lines 28-29) and further allows for eliminating the duplication of hardware (Stricek, page 2, lines 9-10). Ahuja also states that the client agent may be treated as a proxy (Ahuja, column 8, lines 23-25) and further that the client agent may be used with proxies (Ahuja, column 8, lines 34-35), suggesting the desirability of such a combination. Therefore, the invention as a whole would have been "*prima facie* obvious" to one of ordinary skill in the art at the time the invention was made.

26. Regarding claim 10, the claim comprises the same limitations as discussed in claims 2. The same rationale of rejection is applicable.

27. Claims 4-6 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahuja in view of Al-Ghosein and in further view of Stricek.

28. Regarding claim 4, the claim comprises the same limitations as those discussed in claims 1 and 2. The same rationale of rejection is applicable.

29. Regarding claim 5, the claim comprises the same limitations as those discussed in claims 1 and 4. The same rationale of rejection is applicable.

30. Regarding claim 6, the claim comprises the same limitations as those discussed in claim 3. The same rationale of rejection is applicable.

31. Regarding claims 12-14, the claims comprise the same limitations as those discussed in claims 4-6, respectively. The same rationale of rejection is applicable.

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. Allon et al. *Load balancing of network by maintaining in each computer information regarding current load on the computer and load on some other computers in the network* US PAT 5539883. (Describes fault-tolerance and load balancing techniques where each module or computer collates operational status information of its neighbors.)

b. Ballard et al. *Client-side load balancing in client server network* US PAT 6078960. (Describes regular receipt of load-balance list on a client-side information-collating and control module.)

c. Brandstatter. *Controlling load-balanced access by user computers to server computers in a computer network* US PAT 6950849 B1. (Describes a client-side system that polls servers regarding operational status, collates said information, and then selects the server with lowest load.)

d. Goldszmidt et al. *Client-based dynamic switching of streaming servers for fault-tolerance and load balancing* US PAT 6195680. (Describes client-side switching based on operational status of server modules.)

e. Microsoft TechNet. *Network Load Balancing Technical Overview.* (Describes the Network Load Balancing Services of Microsoft Windows 2000 Server, including fault-tolerance, load-balancing, and "heartbeat" periodic status messages.)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Imad Hussain whose telephone number is (571) 270-3628. The examiner can normally be reached Monday through Thursday between 0730 and 1715.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beatriz Prieto can be reached on (571) 272-3902. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Imad Hussain

Beatriz Prieto

BEATRIZ PRIETO
SUPERVISORY PATENT EXAMINER